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Journal of the Society of Arts.

FRIDAY, JULY 2, 1869.

Announcements by the Council.

MEETING.

On Monday afternoon, the 5th of July, a paper "On the Limits to be placed upon Posthumous Dispositions to Public Uses," will be read before the members of this Society, and the members of the Association for the Promotion of Social Science, by ARTHUR HOBHOUSE, Esq., Q.C., to be followed by a discussion. The chair will be taken at 4 o'clock p.m. The Right Hon. Lord STANLEY, M.P., will preside. Members and their friends are invited to be present.

NATIONAL ELEMENTARY TRAINING AND EDUCATION.

The Council and the Members of the Drill Committee, with other Members of the Society interested in education, will, on Saturday, July 3rd, at 11 o'clock, visit the North Surrey District School, at Anerley (by permission), to witness the military drill of the pupils, and also an examination as to their attainments in subjects of elementary instruction, in elementary drawing and music, imparted on the half-time system of mixed physical, industrial, and mental training.

SUBSCRIPTIONS.

The Midsummer subscriptions are due, and should be forwarded by cheque or Post-office order, crossed "Coutts and Co.," and made payable to Mr. Samuel Thomas Davenport, Financial Officer.

Proceedings of the Society.

EIGHTEENTH ANNUAL CONFERENCE.

The Eighteenth Annual Conference of the Representatives of the Institutions in Union, and the Local Educational Boards, with the Council of the Society, was held on Wednesday, the 23rd instant, at 12 o'clock noon. SEYMOUR TEULON, Esq., Vice-Chairman of the Council, presided.

The Secretary having read his report, which appeared in last week's *Journal*, read the following list of subjects proposed for discussion:—

1. What arrangements can Mechanics' Institutions make for promoting the systematic Technical Instruction of the people in their several localities.
2. It being in contemplation to call meetings of the members of the Society of Arts and others in corporate towns, for the furtherance of Technical Instruction, how

far can the Institutions in Union with the Society aid in promoting the success of such meetings?

3. Does the Endowed Schools Bill, now before Parliament, afford any facilities which can be taken advantage of by Mechanics' Institutions for such purposes, and if not, can any steps be taken for obtaining the insertion of clauses with that object in view?

4. In what way can the advantages of union with the Society of Arts, apart from the Examinations, be made available in the provinces?

5. How can the Society of Arts assist in obtaining the extension of State aid to Night Classes in the Institutions in Union?

6. Is it necessary that the Examinations in the same subjects of Science and Art should be carried on both by the Department of Science and Art and by the Society of Arts?

7. Would the extension of the Final Examinations to Commercial and lower Middle-class Schools produce beneficial results?

8. Is it not desirable that scholars in attendance at Day Schools should be excluded from the Elementary Examinations?

The CHAIRMAN, in calling the attention of the meeting to the above list of subjects, observed that it contained one of great importance (No. 6), which had not only come under their notice on the previous occasion, but was also brought before them in the report which had just been read, viz., whether those subjects in which the Science and Art Department held examinations as well as the Society of Arts, should be retained in the programme, or whether it would not tend to economy in every direction if only one examination in such subjects were held. This being the principal topic alluded to in the report, although it stood sixth on the list of subjects, he proposed that it should be disposed of first.

Mr. EDWIN CHADWICK, C.B. (member of the Council), said it was found on all hands that the multitude of examinations was getting very perplexing, and the varieties which existed amongst them really produced no practical benefit of any kind. On that ground alone it would be very good educational policy to obtain, if possible, a uniformity of standards and of examinations.

The CHAIRMAN said he had prepared, for his own information, a comparative table of the numbers of candidates at the Society's and at the Science and Art Department's examinations in the previous year. He would not read it, however, as it was well known to all present that the numbers of candidates examined by the Science and Art Department of the government was very much larger than those examined by the Society of Arts. Moreover, many of the candidates in the science subjects went in for both examinations, and took the Society's prizes as well as those of the Science and Art Department.

Mr. CHADWICK said these facts must convince any impartial person that only one course ought to be pursued. It was no doubt pleasant for the successful candidates to receive two or three prizes from different sources, but the Society could employ its funds in promoting education in other ways much more wisely than in competing in this way unnecessarily with the government. An immense deal of effort was required in the promotion of elementary and technical education, for which large resources would be required; and, in his opinion, the Society could not do better than employ in such efforts what might be saved by the abolition of these surplus examinations.

Mr. J. H. LEVY (Birkbeck Institution) said where the Science and Art Department examinations were precisely of the same character as those of the Society, there could not be two opinions as to the proper course to be adopted, but where they were not identical very different considerations came in. For instance, he believed it would be a great mistake for the Society to give up its mathematical examinations so long as the South Kensington Department grouped all these subjects

together, as was done at present, which really put very great obstacles in the way of persons who had only the gleanings of their time to give to such studies. Then, again, there was an important consideration—what should be done with reference to the Prince Consort's prize. If they discontinued examining in physics and mathematics, these subjects would be shut out from the prize, unless they accepted the certificates of the Department as equivalent to those given by their own examiners. With regard to the general policy of cutting down the number of examinations, everybody who had had any experience in preparing pupils for them must agree that it was very desirable.

Dr. WATTS (Lancashire and Cheshire Union) agreed with Mr. Chadwick that the simpler they could make all their arrangements the better, and he should be glad if they could have one examination which would cover all the subjects; but there were many other matters to be taken into account. The Society of Arts examination presupposed and required a preliminary examination in certain elementary subjects, and this important feature was entirely wanting in the South Kensington scheme, in which each subject was treated as a speciality, so that a candidate might pass in mechanical drawing who could not describe his own work in plain English. It appeared to him that if they wanted really to promote education, they should endeavour to do so systematically, so as to ensure general progress. This difficulty could of course be removed, if the Government required a certain standard of elementary knowledge before awarding a certificate for any speciality. But then there was another difficulty; in Lancashire they had striven hard, and not unsuccessfully, to set up science classes, and to induce men who had passed at South Kensington to take out certificates and become science teachers; the remuneration of these men depended on the number of "passes" they obtained from their classes, and if a sudden change were introduced, requiring a certain amount of elementary knowledge, the pecuniary results to these teachers would be in some cases serious. The difficulty might perhaps be removed if notice were given that after a certain date, say one or two years, a certain standard of elementary knowledge would be required from every candidate, and then the Society of Arts might very properly discontinue their examinations in subjects which were covered by the Government. The only difficulty then left would be that of the Prince Consort's prize, which could no doubt be got over.

Mr. NORRIS (Birkbeck Institution) said it must be remembered that if the Society discontinued their examinations in science subjects, the attendances of the local committees would not be lessened to any important extent. He also begged leave to throw out a suggestion, which he hoped would be favourably received by Mr. Cole, that the Science and Art Department would allow an examination in more than one subject on each evening. The consequence of the present system was, that the examinations extended to such a length that they had great difficulty in getting gentlemen to attend. He thought also it was rather unnecessary to require three gentlemen to be in a room from seven o'clock to eleven, while four candidates were being examined. The Society of Arts were satisfied if there were two committee-men present with twenty candidates, and only required three if there was a larger number.

Mr. GIBBS (Chelmsford) thought that whatever might be the final result, the time had not yet come for any great and sweeping change such as had been proposed. Several serious inconveniences had been pointed out as likely to arise from such a proposal, and he did not think it would be wise on the part of the Society to discontinue their examinations, until they had some guarantee that the alterations suggested in those of the Science and Art Department would be carried into effect. It was necessary in the case of any change of an important character, that its consequences should be looked at in detail, which had not yet been thoroughly done in the

present instance. They had heard something of the comparative number of persons examined by the Society and by the Science and Art Department, but it would be also desirable to know the comparative number examined from year to year by the Society, in order to see whether these numbers were increasing or diminishing. If the latter were the case, he admitted it would be a good ground for making the change, but if it appeared that the Society of Arts examined more candidates every year, he thought an opposite conclusion must be come to. Not long ago, in that very room, the operations of the Science and Art Department were characterised as being "tentative in their operation, ever variable in their regulations, frivolous and vexatious in the manipulation of details; it is no matter of surprise that managers care not for an alliance. The returns of the last examination for the whole country, tabulated and issued by the West Riding Educational Board, will show, judging by those already issued, how impossible it is to maintain that the present science aid can in any but the very smallest degree affect the great and momentous question of industrial education. To the Society of Arts, established to promote manufactures equally with arts and science, standing aside from all political parties, and departmental influence, and commercial rivalry, managers of Institutions in this Union look to take action, in directing national attention to the consideration of industrial education as an important component of national education." It was difficult for him to believe that in the short space of two years the relative position of these two systems had so far changed as to entirely reverse the judgment then pronounced. They must remember that there were scattered throughout the country many eccentric individuals, who, though quite unconnected with any powerful association, studied with an enthusiasm not often found in large manufacturing towns, and it would be very undesirable to ignore this element, to sacrifice the eccentric energy of enthusiasm to the symmetry of centralisation, and convenience to lifeless uniformity, which he much feared would be the case if the proposed change were carried out.

Mr. H. H. SALES (West Riding Educational Board) was exceedingly glad to find that at length the views which he had for many years expressed on this subject had been formally brought under the notice of the conference in the Secretary's report. Dr. Watts had raised the question of the preliminary examinations required by the Society being a reason why the final examinations should be retained; and he was fully aware of the importance of requiring a knowledge of elementary subjects, before the pupil proceeded either to the final examination of the Society or of the Department of Science and Art, but, unfortunately for Dr. Watts, whilst his theory was right, the facts were against him. The Secretary's report contained this passage:—"The falling-off in the percentage of passed candidates must be attributed to the Local Boards not being sufficiently careful in their preliminary sifting of the candidates, and to their too readily admitting them to the final examination." Whatever might be the case in Lancashire, it was evident that throughout the country generally great stress was not laid upon these preliminary examinations, or the report would not contain such a sentence. Again, Mr. Larkins wrote as follows:—"I should observe that the 162 (against 237 in 1868) candidates entered in the table of the Final Examination (Table 1), as having passed a previous examination, have not been examined in the elementary papers furnished by the Society, and a large proportion of those who passed the Final Examination had already taken both prizes and certificates from the Society." These two passages showed that, however desirable it was to insist upon elementary knowledge before proceeding to scientific instruction, this was not always done, even with regard to the Society's examinations. The object was to give a curriculum of study, to test that study, to reward diligence in the pupils, and to encourage a laudable spirit of emulation by awarding

prizes. That had been done in the first instance by the Society of Arts, and, as he had expressed over and over again, he felt that the Society was doing most good when it was acting as the pioneer in educational work; and as soon as that educational work was put on a sound and healthy footing, withdrawing itself and employing its energies in other fields of labour. It had done an immense deal of good in the way he had pointed out, and then the Science and Art Department stepped in. During the first year or two, there were many discussions whether it was right for the government to undertake this work at all. His own feeling was, that government ought to do much more for education than it was doing; but at any rate those discussions had now nearly ceased, and they had the fact that there were two bodies, the Society of Arts and the government, doing identically the same work, and for the same people; for the same persons who took off the Departmental prizes came in and took off the prizes of the Society of Arts. It was not proposed to discontinue the Society's examinations in those subjects which were not taken cognizance of by the Science and Art Department. Many of the subjects were common to both, and the Society's prize-list this year contained several names of candidates who had also taken prizes from the Science and Art Department. It thus happened that the prizes offered by the Society were taken by men who did not require such a stimulus, because they had already followed a course of study, been tested in it, rewarded for their success, and had earned payment for their teachers; and then they came in and took away the prizes from men who had not been prepared by a similar course of study in connection with the Science and Art Department. They were, therefore, rewarding those who had already been rewarded. If the Society of Arts liked to spend its money in that way, well and good; but his own feeling was, that they would do much better by devoting the funds to some cognate purpose not yet taken up by the government. If it appeared that there were any institutions which preferred the Society's examinations to those of the Department, it might be a question whether or not the Council might think it well to continue them; but those who were practically acquainted with the matter knew that, year by year, the most obstinate opponents of the Department were coming in to its examinations, and the number of those who did not attend was constantly growing less. It was really a matter of great difficulty to obtain properly-qualified men for the local committees, and it was not well that their labours should be increased unnecessarily by the multiplicity of examinations.

Mr. LAWTON (Lancashire and Cheshire Union) said Mr. Chadwick had spoken of a decrease in the number of certificates, but in Lancashire and Cheshire there had been in recent years a very considerable increase. Again, the Society's examinations were not of the same character as those of the Science and Art Department, and a certificate of the Society was much more valuable, inasmuch as it carried with it the assurance that the possessor had passed a certain examination in reading, writing, and arithmetic, and, in consequence, it was thought much more of, at any rate in the district with which he was connected. Again, it must be remembered that the Department only paid the teachers upon the artisans who passed; and the inspectors had been so very strict in examining the registers, and striking off all who were even the least degree above the artisan class, that teachers were not encouraged to assist those upon whom they got no payment. As to the difficulty about the Local Boards, he thought the Department might easily relieve them from it by abolishing the examining committees. They generally sent down inspectors, who spent a considerable time in the examination rooms, and he thought they might as well be there the whole time and relieve the committee. With regard to the Society of Arts prizemen having previously passed the Departmental Examinations, it must be remembered that the government prizes were often of small value, and did not imply a

high certificate. Some of the Institutions in Union actually based the constitution of their classes on the Society's examinations, as for instance, the Salford Working Men's College, which had this year carried off a larger number of certificates even than the Manchester Mechanics' Institution. He should be very sorry, in the present state of things, for the Society's examinations to be discontinued.

Mr. RUMNEY (Manchester) was in favour of continuing the examinations in the subjects referred to. He did not see that the Council were to initiate a change because some candidates had been in both examinations—that was to be expected. The secretary of the Manchester Mechanics' Institution wrote to him as follows:—"As to whether the Society's examinations are unnecessary where the government examinations take the same ground, I think certainly not; many go in for one who are precluded from the other, not having attended a science class, and it seems to me that the preparation required for both has a tendency to lengthen the term of special study. Moreover, one examination acts as a kind of rehearsal for the other, and that cannot but be beneficial. I have heard this latter reason given by our own students." His own experience was, that the Society's certificates were regarded as of much higher value than those of the Department, and this being so, he could not but think that it would be very injurious to the progress of education if the Society were to discontinue its examinations. Surely the difficulty that had been referred to, as to the time and mode of holding the examinations, could be remedied, and if that were done, he thought it would be much preferable to discontinuing the examinations altogether.

Mr. HELLER (Lambeth) said he attended at the request of his Local Board, expressly to speak upon the question now before the meeting; but, since coming into the room, he must confess that he felt the position which he had been induced to take up somewhat shaken. The argument advanced by Mr. Sales, that in many of these examinations they were expending useless effort, only covering ground which was occupied by other agencies, seemed incontrovertible, but he was not quite sure whether the time was fully come for the Society to withdraw its examinations in all the Departmental subjects. He did not think the government examinations were put upon such a satisfactory footing that the Society could withdraw, and leave the examinations in the hands of the government. There was at present a very sincere intention on the part of the Department to put science teaching on a satisfactory basis, but there was as yet something very tentative about its action, and it could hardly be said to have obtained the confidence of the committees, or of the teachers themselves, as to its permanency. The clause at the beginning of the directory, which stated that the grants for science-teaching were liable to be diminished and ultimately withdrawn, acted as a damper upon the whole scheme, and, therefore, before the Council of the Society of Arts decided upon withdrawing their examinations in certain subjects, he thought they ought to be satisfied that science teaching would be made permanent by the Department, and in such a way as to meet the requirements of the country. The argument about the prizemen he considered a little beside the mark, as it probably did not apply to a hundredth part of the whole number of candidates; and it must be expected that such things would occur where two organisations covered the same ground. After what he had heard, he could hardly vote for asking the Council to continue the examinations in question, but he did hope that, before relinquishing them, they would satisfy themselves that no injury would be done. In his own experience, it was found very easy to get managers for the Society of Arts examinations, but very difficult to get a sufficient number for those of the Science and Art Department, the reason for which was, he believed, that in the former case the office was purely honorary, while

in the latter it was looked upon as a sort of favour to the science teacher.

Mr. HENRY COLE, who prefaced his remarks by saying that he spoke simply as a member of the Council of the Society of Arts, and not as Secretary to the Department of Science and Art, said his opinions now were the same as those he had frequently expressed to his lamented friend Mr. Harry Chester, who, he was bound to say, did not at all agree with them. He would remind gentlemen present that the Society expended between £800 and £1,000 a year in conducting these examinations, and looking at it simply in a pecuniary point of view, they obtained as a set-off only the subscriptions from the Institutes in Union, which did not amount to one-half the amount. It would naturally occur to everyone that the Society ought to do its work as economically as possible; and, as Mr. Chadwick had remarked, there were many subjects upon which, if they had funds at their disposal, they might usefully employ them. The question, therefore, came before them in this shape—Was it most profitable to be going over exactly the same ground which was occupied by another organisation, or to take up some other ground, which was lying altogether fallow and untrodden? It seemed to him that the latter was unmistakably the proper course. No one would deny that there were many ways connected with education, particularly elementary and technical instruction, museums and free libraries, in which money might very usefully be spent, and to some of these he hoped the funds now expended in these duplicate examinations would be applied. They could hardly do better than endeavour to promote a better elementary education, as, for instance, by offering prizes for good handwriting. According to his own experience handwriting had much deteriorated within the last two centuries; he had seen specimens of writing 200 years ago far above the present average. It seemed to him that the function of the Society of Arts was to deal with that part of education which the State did not touch at all. Now, the State spent a great deal of money in teaching reading, writing, and arithmetic to children up to a certain age, but nothing for carrying that on in evening classes for the benefit of adults. This, therefore, was one direction in which, as he conceived, the Society's funds might be properly and usefully applied. They could not, however, throw too much strength into elementary subjects. As far as he could see, there were nearly twenty subjects which there was no chance of the government including in their programme, but a knowledge of which was very desirable; for instance, Roman history, Italian, French, and, above all, the English language, the last a most important matter, for not one person in a hundred could write decent English, and still fewer could speak it; but there was nothing in which the English people were more interested than in perpetuating the language spoken by Milton, Shakespeare, and their forefathers. Something was said in one of the reports about teaching geometry after school hours; he never knew anything learnt well after school hours except play, and there was no surer way of disgusting a boy than to put him to one of these dry subjects when he ought to be enjoying himself. With reference to the suggestion that, instead of seeking the co-operation of the different localities, the government should send round inspectors to attend all the examinations, he would only remark that there was some difficulty at present in obtaining, for payments for results in science and art, £15,000 a-year from Parliament, which would have to be doubled if such a plan were adopted. It was simply a question whether gentlemen would come forward in the different localities and take this duty upon themselves, or whether they would pay to have it done. He did not see how more than one subject could be examined in at the same time, unless there was an increase in the number of committee-men, because the examinations, to be fair to each candidate, must be simultaneous, and where £200 or £300

to one school depended upon the result, it was absolutely necessary that the rules should be strictly adhered to; indeed, there seemed no alternative between an absolute Draconian system and none at all. Notwithstanding all these precautions, he was sorry to say he feared there were sometimes irregularities. In some cases, it was true, there might be three judges to four candidates, and it might look absurd to see in a blue-book that only 3s. 6d. was earned in one examination, but in other cases there was as much as £100, £200, and in one instance, which had caught his eye, £293. He did not quite follow the train of reasoning which sought to continue the Society's examinations because the Department paid for artisans only, because the Society did not pay for anyone. The principle of the government was, that those who were not able to pay for themselves should be assisted, and he thought that principle was the right one.

Mr. LEVY said he believed the point really was, that the help given by the Science and Art Department seemed rather of an eleemosynary kind, and there was a feeling amongst some persons that they were humiliated by going up to these examinations.

Mr. HELLER said the argument, although not his own, appeared to be that, by taking away the Society of Arts' examinations because they were held by the Science Department, which paid for the instruction of artisans, the middle-class would be deprived of the benefit of these examinations.

Mr. SALES desired to protest most strongly against the sentiment expressed by Mr. Levy, that there was anything humiliating in accepting aid from government.

Mr. LAWTON said he had used the argument referred to, and it was founded on his own experience in Lancashire, which was to the effect that science teachers, when applied to by middle-class pupils to prepare them for the examinations, replied in effect that they did get no payment on their account from the government, and therefore they must require a fee from them to repay them for their trouble.

Mr. COLE said his experience had been quite the contrary; middle-class pupils could come to the day classes, and in the case of evening classes they found that a gradation of fees worked very well indeed. At South Kensington they had pupils who paid fees varying from 20s. to ten guineas a-year, all in the same room, using the same models, and taught by the same masters, and there was no difficulty whatever about it. He would conclude by saying that the Science and Art Department, like all human institutions, was far from perfect, and was therefore, to a certain extent, tentative in its proceedings; but notwithstanding all their failures the results were not discouraging. In the present year they had had examinations at 437 centres, as against 261 last year, and they already had notice of a further increase, while the number of papers worked had risen from 13,000 to close upon 24,000; and he might add that, in order to meet the demand of localities for payments on account of science and art teaching, they had been obliged to curtail their building grants at South Kensington.

Mr. TRAICE (Lancashire and Cheshire) desired to offer a remark on the statement of Mr. Cole, that the government paid for the instruction of the working classes in science because they were supposed to be unable to pay for it themselves. He must demur to that proposition entirely. He held that the Department had no business to exercise charity at all; that the sole reason for creating the Department was to aid, if possible, in promoting technical education throughout the country, and if for that purpose it appeared desirable to educate a millionaire, it would be the business of the Department to do so. Speaking broadly, that was the only basis upon which the existence of the Department could be defended. Therefore, so far from drawing a line between the middle and working classes, they ought, as far as possible, to utilise the intellect of those who had had a somewhat better education, in promoting the main end in view. He had before suggested that a great deal of difficulty

might be got over by a system of handicapping; under which a higher standard should be required from middle-class pupils, in order to entitle the teacher to payment. He had long entertained the opinion that it was very undesirable to have such a number of examinations as now existed, and he would not stop with discontinuing examinations in those subjects which were also taken up by the Science and Art Department, but would like to see the whole question discussed, with the view of initiating some general scheme, which should deal, first, upon a broad principle with primary education; next, with working-class-education up to a certain point; next, with so much of university education as might be said to be practical and technical; and, lastly, to have it clearly defined what part should be taken by the government in each of these departments, so as to do away with the present muddling system, which seemed to work more for examinations than for education. He hoped the Society of Arts would keep a vigilant eye on the working of these Science and Art examinations, to see how they could be brought more thoroughly *en rapport* with the wants of the time with regard to technical education. The question of the preliminary examination was an important one; but he believed that, two years ago, Professor Huxley had stated that where he found bad spelling and writing, he should deduct so many marks, and in the same way he thought the Department might considerably advance the cause of primary education by making it known that the special examinations were open to all, yet those who had not taken the trouble to acquire a certain amount of skill in writing and spelling would be under heavy disadvantages in the competition. It might be said that this would be a hardship on the teacher, but he did not conceive that it would be so if sufficient notice were given beforehand.

Mr. COLE thought the same end would be answered by giving additional marks and rewards for good spelling and writing.

Mr. TRAICE said he should like to see that, but it would not have the same effect as the plan he proposed, in making it to the interest of science teachers to promote primary education.

The CHAIRMAN, in summing up the discussion, said that, coming to the question as he did, quite unbiassed to one side or the other, he could not avoid the conclusion that most of those present were pretty much agreed that it was undesirable that either the Society of Arts or the Department should waste their energies in a duplicate system of examinations. The next point upon which they were tolerably unanimous was that the Science and Art Department were constantly changing, and this he conceived to be a very favourable feature, as it evinced an anxiety to bring their operations as near perfection as possible. He was sure the suggestions made for the improvement of the examinations would be carefully weighed and considered by the Department, and, on the other hand, the Council would make no change in their programme without very careful deliberation.

Dr. WATTS hoped that whatever determination was come to by the Council about striking out any of the present subjects, the number of nights for examination would not be reduced, and that they would endeavour to come to some understanding with the Department of Science and Art, so that least a fortnight's interval might occur between the two examinations.

Mr. NORRIS, who desired to express to the Council the thanks of the Institution which he represented, for having so kindly received the suggestions made last year, said he had one more to offer, namely, that General History should form part of the programme (divided possibly into modern history, the history of the middle ages, and ancient history), and that at the same time the historical and literature questions should be removed from the papers in modern languages. He had met with many objections to these questions, which only served to take up the time of the pupil and distract his attention

from the study of the language itself, and resulted at best in a cram.

Mr. LEVY suggested that the examinations should take place later than at present, say the last week in May; he thought it would suit the convenience of all parties much better at that time.

Several gentlemen having intimated a different opinion, a show of hands was taken, which was strongly in favour of making no considerable alteration in the time of holding the examinations.

Mr. GIBBS begged to call attention to the fact that the prizes in botany, offered by the Royal Horticultural Society, had been taken by gardeners employed at the Royal Gardens at Kew, who really enjoyed the advantage of instruction from the Professor of Botany in the London University. He did not think such persons should be allowed to compete.

The discussion on the first and second subjects, namely:—"What arrangements can Mechanics' Institutions make for promoting the systematic Technical Instruction of the people in their several localities?" and "It being in contemplation to call meetings of the members of the Society of Arts and others in corporate towns, for the furtherance of Technical Education, how far can the Institutions in Union with the Society aid in promoting the success of such meetings?"—was then opened by—

Mr. EDWIN CHADWICK, who said—If we take the statistics of the numbers of members of Mechanics' Institutions in London, in Manchester, or in Leeds, or any of the most active seats of industry, and compare them with the numbers of the manufacturing population, it is perceived that the support they obtain is deplorably inconsiderable. One main cause of this is, after all, the restricted amount and the defective quality of the primary education given there. It may be taken now as generally admitted that any extension of technical or superior education, of any sort, must be based on an extended and improved system of primary elementary education. All the reports go to this. The extension of a sound primary education will be a means of the extension of the support of all such institutions as those in question, as well as of technical education. Now, it has to be considered that the present normal state of primary education is such as to exclude the lower middle-classes, as well as the great bulk of the wage-classes. Those who are connected with some of the well-organised large schools of the towns, and who only know those instances, know only the exceptions. The average number taught in the general average schools throughout the country is only fifty. Now, in schools of that size, even under trained masters, each with the aid of a pupil teacher, it is impossible to get through the "three R's" well in less than from six to seven years, or, by the thirteenth to the fourteenth year. In this condition the children must go away, as they do generally go away, only half-taught the "three R's," for they must go away about their tenth or their eleventh year. From one end of the country to the other, it is the complaint of the teachers of small parish schools that their children of the wage-classes are taken away too soon, and there is a cry for compulsory measures to detain them. But they will not and cannot be detained for the time required on the present scholastic system. Then, the lower middle-classes must leave by their thirteenth or their fourteenth year, and they leave only with the "three R's," and not taught in the best manner after all the time that has been occupied with them. They have generally no time to learn any more from the day school. Hence it is that it is only accidentally or exceptionally that science or art is studied for elementary education in after-life, and in night or adult schools, which ought to some extent to be studied in the primary schools. Nearly one hundred thousand communicants with the Science and Art Department is a vast number in comparison with what the Society now does or can do,

but it is inconsiderable as compared with what ought to be done, for the maintenance of the industrial position of the country. There ought to be, and there might be, upwards of a million under technical instruction in the secondary, and under preparation in the primary schools. It is to be regretted that the principle of the remedy has been so much overlooked, and that it has remained to me to assert it—namely, the principle of the administrative combination of educational means, or of the aggregation of numbers in school unions, so as to obtain division of educational labour and simultaneous teaching in large classes. Other occasions must be taken for the due development of this principle. It must suffice to state that, by its proper application, the “three R’s” are taught well in half the time in which they are now taught indifferently. The work may be completed, and that at less cost, before the end of the eleventh year, instead of by the end of the thirteenth year. Three years of time may be gained for technical instruction in anything that may be selected, or in any art or science that can be taught within the three years. The special interests of the Institutions in Union are involved in this needed reform of our primary education, and in the general gain of time for technical instruction, in whatsoever can be given in the day-schools—for a national system of education will leave much to be supplemented, after the school stages, as languages not generally taught, Italian or Spanish, or arts not generally taught, which may be taught in these institutions. Moreover, a reform in primary education, by the division of educational labour, will provide gradations of rank for professional teachers, and will add to the number of the supporters of these institutions, for the sake of the ornamental arts or for refined amusements. On all grounds, the active support of the associations is needed to a movement for the extension of a reformed system.

Mr. SALES cordially agreed with Mr. Chadwick, that the subject of primary education was of the utmost importance, but that was hardly the topic before them, although connected with it. From the various reports which had been issued, he was aware that, in Lancashire and Yorkshire, the science classes in connection with the Department of Science and Art were year by year increasing, and he did not think that they were too sanguine in hoping that, through the organisation now in existence, they would shortly be able to establish similar classes throughout the whole of those northern counties; but they must by no means rest content with their labours in that direction. The conditions of success must be taken into consideration, and one condition was, that the pupil should come to these evening classes in some degree prepared for the more advanced knowledge which he was there to receive. To some extent he feared the present system was one of cramming, and from the nature of things it must be so. One great necessity, then, was the introduction of some branches of science into primary schools. Mr. Chadwick had referred to the difficulty of teaching the “three R’s.” He was more and more convinced that the Revised Code was doing an immense deal of harm to the cause of education by its rigid adherence to the “three R” system. He believed the teaching of these elements would be much facilitated and time saved if the intelligence of the children were developed by the introduction of some branch of natural science, he cared not what, into their studies, and they would certainly be better prepared for entering science classes in Mechanics’ Institutes. But that was not the only requisite. The operations of most of these institutions were carried on in the evening, the class-rooms being unoccupied during the day, and it seemed to him that the answer to the question, “What arrangements can Mechanics’ Institutions make for promoting the systematic technical instruction of the people in their several localities?” would be, that wherever circumstances were favourable, the managers should turn their attention, as had been done at Manchester and Leeds, to the establishment of a day-school, in which, in

addition to the usual branches of education given in lower middle-class schools, they should teach natural science. To his mind no work could be taken up by the managers of Mechanics’ Institutions with more advantage, even to Institutions themselves, because these day-schools would train up pupils for the more advanced evening classes, and, in fact, the Institution would become the *alma mater* of the district. He knew that, in many districts of Yorkshire, these Institutions were valued very greatly on account of the social intercourse which they promoted between different classes, and this would certainly not be weakened when the educational advantages were so much improved. He would, therefore, move:—

“That in the opinion of this meeting it is desirable, wherever possible, to establish day schools, to include teaching in science, in Mechanics’ Institutions.”

Mr. LAWTON, in seconding the resolution, said in his opinion it was also quite as advisable to establish science classes in day schools and elementary schools not held in Mechanics’ Institutions. But, further than that, systematic instruction in special work was required. They were getting a large number of first and second class certificated men in Lancashire, who had gone through the evening classes, and where were they to go? Owens College was not at present prepared to receive them, and they were not qualified to go into the Universities. Something was wanted to meet their case, and he thought Mechanics’ Institutions might do a great deal by holding meetings, forwarding circulars, and so on, to bring about the establishment of science colleges.

Dr. WARRE said Mr. Chadwick had introduced a very important subject, but it was one for the future rather than the present, and one which could only be fully worked out when they had a national system of education. While education was denominational, it would be impossible to carry out the plan proposed, however desirable. With regard to the question introduced by Mr. Sales, they must not forget that they were tending towards a national system of education, and that that national system ought in the first instance to include every child in an elementary school; for only in such a way could compulsory education be justified. Then, going beyond elementary schools, they ought to have in connection with existing endowed schools and others of the same class, certificated teaching, and these secondary schools would run parallel with the science classes now at work under the government department. And then, again, to meet the wants of the class referred to by Mr. Lawton, it seemed to him that there ought to be eight or ten central science colleges, into which to draft boys from endowed and secondary schools, who had devoted themselves to physical science, and also the holders of first-class certificates in science classes. They might also admit the sons of persons in the higher middle-class who were willing to pay for the higher education there given. Mechanics’ Institutions might operate by pressing upon the government the necessity for such science colleges, and they could also operate in the extension of the science classes under the Department. If Mr. Forster’s Endowed Schools Bill did not sufficiently provide for it, they could bring their weight to bear upon the government, in order to ensure a provision by which science teaching might be introduced into all endowed schools. They might also do good service in the way pointed out by Mr. Sales’s resolution. With regard to the second question, as to what local Institutions could do to aid the Society in promoting technical instruction by holding local meetings, they could no doubt form organisations which would bring the matter prominently before the public in their own neighbourhood, and enlist a great deal of local influence which would have weight in promoting the end in view, but he did not see his way at all to any adequate amount of technical instruction being diffused amongst the working classes without the establishment of science colleges.

Mr. RUMNEY said that Mr. Samuelson's Committee, which sat during last session, clearly proved that there was not so much deficiency in technical as in primary education. The establishment of day-schools in which science teaching would be conspicuous would be met by this difficulty, that they could not be certificated. It seemed very absurd, but so it was, that a school might be set up next door by any religious denomination, which, by reading a chapter from the Bible once a day, would be held to include religious instruction, and would be certificated, whilst that held in the Mechanics' Institute would be excluded. This absurdity ought to be got rid of as soon as possible, and until it was he did not see how the system Mr. Chadwick proposed could be adopted. He did not see how these proposed day-schools could exist in competition with those receiving aid from the State. They must alter the current of public opinion on this head before they could hope to do much in this direction.

Mr. HELLER said the whole matter was really bound up in a proper arrangement of the teaching power of the country, so that it might be utilised exactly to the desired point, and in localities where it would be of the most value. He hoped that, before any action was taken, either by the Society of Arts or any other body, with regard to science-teaching or night-school teaching of any kind, a conference would be held on the question of re-organising the entire arrangements of the educational staff throughout the country; and, before doing so, it would not be wise to increase the difficulties in the way, by erecting new institutions which would have to be modified at a future time. Much might be done, he believed, to advance the interest of science classes by holding meetings, into which the weight of the Society's influence would be thrown. He was sorry to say that the bright example set by the northern counties in this matter seemed utterly lost upon the metropolis, where it was often difficult even to get managers to come and conduct the examinations. He thought, therefore, it would be very advisable if the Society of Arts could arrange to hold meetings in London under their own auspices, by which the interest of employers, and especially of working men, might be stirred up.

Mr. CHADWICK proposed a rider to the resolution as follows:—"And to promote such schools as will have the proper arrangements to ensure such division of educational labour as may be requisite to ensure efficient and economical teaching in time and money." He said that, on what had been remarked as to religious teaching, he had to say that he was not for excluding religious instruction from the school, but for having it given in the school in a much better manner than it now was by the pupil teachers, namely, by having it given as it was given in our army schools and in Holland, directly and more impressively, by the pastors of the religious denominations, for whom stated times for its teaching should be arranged.

Mr. NORRIS asked if the Society had determined upon holding meetings at different centres; he thought such a plan would be very advisable.

The CHAIRMAN said the matter had been carefully considered by the Council, and they had determined on holding at least one meeting in the north. They were aware of the difficulties which must attend a Society located in London taking up the matter in distant centres, and their future proceedings must depend upon the amount of support they received.

Mr. NORRIS said it would be well, in such a case, for the Society to hold meetings in the various Institutions where they were large enough, and the Institutions could no doubt render aid by sending round invitations in the neighbourhood. He feared much would not be done in London, because the working men of the metropolis did not seem to respond to the advantages offered them. He was acquainted with one institution in London, however, where a class for technical instruction had been in operation for many years, and had been very successful.

In order to be so, the subjects taught must be suitable to the requirements of the district.

Mr. W. E. JONES said it was a matter of regret to him that the working men of London did not take so much interest in scientific classes and lectures as seemed to be the case in the north, but such was unmistakeably the fact; and if, therefore, the Society of Arts could do anything to awaken this interest, they would be doing a great public service.

Mr. NEILSON (President of the Glasgow Mechanics' Institution) said he attended at the request of his committee, and had been listening anxiously for any information which might aid them in the endeavours they were just now making to carry out a system of technical instruction. A great deal had been said about primary and scientific education, but as to technical education, which was a more difficult subject than either, he had not heard anything, although, in his opinion, it was one of the most important questions of the day. The Society of Arts had done much to produce the Great Exhibitions which had been held of late years, and these, owing to the superior technical education enjoyed by foreign workmen, had enabled them to compete successfully with ourselves in many branches of the arts and manufactures. He looked, therefore, to the Society of Arts to aid them in setting on foot and maintaining such a system of technical instruction as would place them in a fair position to compete with their continental rivals. They were hoping to establish in Glasgow, before long, something on a larger scale than had hitherto been attempted, but, before launching out into a great expense, they were anxious to obtain all the information and assistance they could.

The CHAIRMAN observed that, if Mr. Neilson stated what was proposed to be done, he might get some valuable suggestions.

Mr. NEILSON feared there was not then time to enter at any length into the detail of their plans. What he understood by technical education was not scientific nor yet primary instruction, but the application of both to the useful arts and manufactures of the country. One gentleman had spoken of the difficulty of securing the attendance of working men to abstract subjects in the lecture-room, and that fact was patent to all; but what was wanted was to show the application of these abstract sciences to the useful arts, and for that purpose they must have lecturers who knew something about the arts and manufactures; and, even then, the lecturer, in order to make his subject intelligible and interesting to his audience, must have not only books and a black board, but some good models and coloured drawings, to illustrate his remarks. A few minutes' explanation with such aid would convey more information than an hour's reading from a book.

The resolution, with the rider, was then put and carried unanimously.

Dr. WATTS then moved:—

"That in the opinion of this meeting all Mechanics' Institutions should be pressed to establish science classes under the Government, also to assist in any public movement for the establishment of science colleges in the various industrial centres, after the manner recommended by the Parliamentary Committee on Scientific Instruction, 1868."

Mr. NORRIS seconded the resolution.

Mr. TRAICE hoped that several meetings would be held in different centres, and that one of the results would be to raise the question whether the old organisation of Mechanics' Institutions had not done its work, and whether the time had not arrived for their complete re-organisation. They talked about what such Institutions could do, and seemed to forget that they were merely voluntary associations, depending entirely on the number of subscribers, and, moreover, that just in proportion as they were promoting the legitimate work of these societies, viz., the teaching in evening classes, were they comparatively superseding the organisation upon which they had been originally

founded. In the first instance they were started with a sort of congeries of objects, including a library, reading-room, and lectures, which were taken advantage of by adults, from whom the managers were selected. Now, in many instances there was little left but the classes of young men, and there was a difficulty in finding managing directors. Another matter of importance was the providing assistance for those who had made a certain amount of progress in their studies; a pupil might have attained a good position in his class, but the institution had no library which was of any use to him, and nothing was done to provide one at the public expense. There were other considerations of a similar character, which he would embody at a future time in a communication to the *Journal*, which led to the conclusion that the present system of Mechanics' Institutions had done their work. Referring for a moment to the previous resolution, he might say that, as far as his experience went, wherever there was a day-school in connection with the Institution, a superior class of teaching was secured for the evening classes. There could be no doubt that the establishment of Science Colleges would be an immense advantage in every way, not only in their direct effect, but as setting up a high standard of efficiency in scientific teaching.

The resolution was put, and carried unanimously.

On the suggestion of the CHAIRMAN, the discussion of question No. 3 in the agenda paper was omitted under the circumstances alluded to in the report.

In connection with No. 4, Mr. MOGE (Devonport) said he was requested to ask whether the Society could help country Institutions out of the difficulty which they constantly met with, of getting good science lecturers.

The CHAIRMAN said he would make a note of the matter, and it would receive the attention of the Council.

Dr. WATTS, in reference to the question, "How can the Society of Arts assist in obtaining the extension of State aid to night-classes in the Institutions in Union?" said the government already gave aid to night-schools held in the same rooms as elementary day-schools, and taught by the same teachers, and the consequence was, that these classes competed on very favourable terms with the Institutions, and took away their pupils. It was only fair that if State aid were given to night-schools at all it should be given to all parties. He would therefore move—

"That the Council of the Society of Arts be requested to urge such of its members as are in Parliament to advocate the extension of similar aid to the night-classes in connection with Mechanics' Institutes as is now given to night-classes held in elementary day-schools."

Mr. HOLE seconded the resolution.

Mr. NORRIS said he believed this subject had already been brought before the government, when it was promised that it should receive consideration, in connection with the great scheme of education which would be brought in probably next session. However, there could be no harm in again bringing the matter forward.

Mr. HELLER remarked that in all probability the Committee of Council would insist upon the teachers being certificated.

Dr. WATTS said he should not object to that condition. He did not ask favours, but simply justice.

The resolution was put, and carried unanimously.

Mr. SALES opened the discussion on the next subject—"Would the extension of the Final Examinations to Commercial and lower Middle-class Schools produce beneficial results?" He said that in Yorkshire every effort had been used to promote the success of the University local examinations, but, nevertheless, it was found that a very small per-centage of the children attending middle-class schools took advantage of them, and on inquiry it appeared that this did not arise from the want of preparation amongst the pupils, but from the indifference of the parents. It must not be forgotten in all these discussions that the apathy or indifference of the working-classes on the subject of education was

no greater than that of the class above them, and the expense was one obstacle. The Oxford fee was 35s. for the senior, and 25s. for the junior examination, and the Cambridge fee in each case was 25s., in addition to which, in the majority of cases, there was the expense of the pupils' board and lodging for a week. It, therefore, appeared to him that, by a slight modification of the arrangements of the final examinations, the Society of Arts might do a great deal of good to middle-class education, at any rate tentatively, because he hoped Mr. Forster's Endowed School Bill (No. 2) would sweep away the middle-class examinations of the Universities, and establish a thorough system of inspection. As it was doubtful, however, when this bill would be passed, he should advocate the Society doing something in the meanwhile. His proposal was that, on payment of a fee of two guineas, any middle-class school should be admitted to the same privileges with regard to the examinations as an Institution in Union, with the provision that pupils should be at least 14 years of age, instead of 16, and that they should not be eligible for prizes.

Mr. NORRIS said if the Council acted on this suggestion, it would be departing from the principle they had hitherto gone upon, of aiding education in evening classes only, and not interfering with ordinary day-school education. How far this was desirable of course the Council would decide. It might lead to a very heavy additional expense, which he should think unnecessary, because there was no doubt that, before long, a government measure would be introduced which in all probability would meet the case.

Dr. WATTS thought this subject was one entirely for the consideration of the Council of the Society; no doubt if the scheme succeeded, it would entail an immense amount of labour and expense; but it was a question solely for the Council whether they saw their way to being reimbursed. He saw no objection to it, with the limitations Mr. Sales had proposed.

Mr. SALES thought the principle of separating the artisan class from those immediately above them was very prejudicial, and he might also observe that the Birkbeck Institution, the City of London College, and such institutions, received pupils of exactly the same class as attended middle-class schools. He would move the following resolution:—

"That the extension of the Final Examinations to day-schools in union with the Society of Arts, whose pupils are over the age of fourteen years—such pupils being ineligible for prizes—would produce beneficial results."

Dr. WATTS seconded the resolution.

Mr. GIBBS did not see that the proposal of Mr. Sales would at all interfere with the general scope of the Society of Arts' operations, and saw no reason why a person should be excluded from the examinations, if the Council thought right to admit him, because he received his education in the day-time.

The resolution was then put to the meeting, and carried.

Mr. SALES proposed that the eighth question, "Whether pupils of day-schools should be excluded from the preliminary examinations?" should not be entered upon at so late an hour, and in place thereof moved a vote of thanks to the Chairman for his kindness and ability in presiding over the conference.

Mr. NORRIS seconded the motion, which was carried unanimously.

The CHAIRMAN briefly acknowledged the compliment, and the proceedings terminated.

FREE PUBLIC LIBRARIES AND MUSEUMS COMMITTEE.

At a meeting of this Committee, on Monday, the 28th June, HENRY COLE, Esq., C.B., in the chair, the following resolution was passed:—

"That the Right Hon. W. E. Gladstone be requested

to receive a deputation from the Free Libraries and Museums Committee of the Society of Arts, appointed to promote the circulation to Local Museums, Libraries, and Institutions of the United Kingdom of the superfluous or unexhibited specimens of Works of Art, Science, and Literature in the National Museums and Galleries in the metropolis."

ANNUAL GENERAL MEETING.

The Annual General Meeting, for receiving the Report from the Council, and the Treasurers' Statement of Receipts, Payments, and Expenditure during the past year, and also for the Election of Officers, was held, in accordance with the bye-laws, on Wednesday, the 30th of June, at 4 p.m., Lord HENRY GORDON LENNOX, M.P., Chairman of the Council, in the chair.

The Secretary having read the notice convening the meeting, the minutes of the last Annual General Meeting, and of the subsequent Special General Meeting, were read and signed.

The Chairman then nominated Mr. Botly and Mr. Dawbarn as scrutineers, and declared the ballot open.

The Secretary then read the following—

REPORT.

At the Annual General Meeting, the Council lay before the members of the Society the report of their proceedings during the year.

THE ALBERT MEDAL.

This medal, which was founded, as the members will recollect, for rewarding "distinguished merit in promoting Arts, Manufactures, or Commerce," has this year been awarded to Baron Justus von Liebig, Associate of the Institute of France, Foreign Member of the Royal Society, Chevalier of the Legion of Honour, "for his numerous valuable researches and writings, which have contributed most importantly to the development of Food Economy and Agriculture, to the advancement of Chemical Science, and to the benefits derived from that science by Arts, Manufactures, and Commerce." In making this award, the Council were much assisted by the members of the Society and others, who were good enough to communicate to the Secretary suggestions which were of much value in enabling the Council to arrive at their decision; and the Council feel assured that the award they have made will carry with it, not only the approval of the members of their Society, but that of the scientific world in general.

THE SWINEY PRIZE.

From the interest of £4,500 bequeathed to the Society, the will of Dr. Swiney directs that, on every fifth anniversary of his death, the Society shall present "to the author of the best published work on 'Jurisprudence' a silver goblet, value one hundred pounds, with gold coin in it to the same

amount;" and in the award of it he associated the College of Physicians with the Society. This year the quinquennial period came round, and the award was made in favour of William Augustus Guy, M.D., author of a work entitled "Principles of Forensic Medicine." The work was selected by a joint committee of the Society and the College of Physicians, presided over by the Lord Chancellor; and the selection of the Committee was unanimously confirmed at a meeting of the judges appointed by the will.

ART WORKMANSHIP.

The programme of prizes offered last year was considerably altered from its previous form, and more liberty was given in the choice and treatment of the subjects, as had been frequently urged upon the Council by the competitors. The result of the competition was not such as to encourage the Council to continue the programme in that form. Articles were sent in competition, but prizes to the extent of £95 only, as compared with £198 10s. in the previous year, were awarded. The Council this year, on the recommendation of the Judges, have issued a programme which, whilst it retains much of the altered programme of last year, has combined with it nearly all the features of the previous programme.

IMPROVED RAILWAY MEAT VANS AND MILK VANS, AND MILK CANS.

At the suggestion of the Food Committee, as having a material bearing on the supply of food to the people, the Council last year offered prizes for the most improved railway vans adapted for the conveyance of meat, the conveyance of milk, and for the cans, or churns as they are termed, in which milk is brought to London. A considerable number of models have been sent in for competition, and the Council have sought the assistance of well-qualified judges to decide on their merits. The judges on the meat vans were—Mr. Rudkin, the Chairman of the City Markets Committee; Mr. Tyrrell, Superintendent of Traffic on the Great Western Railway; Mr. M'Lagan, M.P., nominated by the Royal Agricultural Society of England and the Highland Society of Scotland. The judges of the milk vans and cans were Dr. Voelcker, nominated by the Royal Agricultural Society of England, Mr. Tyrrell, and Mr. J. C. Morton. As regards the railway meat vans, the judges are of opinion that although there is considerable ingenuity displayed in some of the models sent in, and a careful consideration shown of principles which it is desirable should be borne in mind in the construction of meat carriages, yet that there is no one which they can recommend as deserving of the Society's prize.

As regards the vans for conveying milk, the judges are of opinion that no model sent in is

deserving of the prize. As regards the cans for the conveyance of milk, the judges are of opinion that the can No. 4, sent in by the Aylesbury Dairy Company, is the best, and they recommend that the Society's Silver Medal and £10, as offered, be awarded to it.

CANTOR LECTURES.

There have been three courses of Cantor lectures this year. The first course was delivered by Mr. W. H. Perkin, F.R.S., who treated in four lectures the important subject of the Aniline Dyes, materials which have had an important bearing on the arts and manufactures of this country, creating, in fact, a complete revolution in the art of dyeing and calico printing. The second course was given by Mr. Solomon Hart, R.A., and consisted of four lectures on "Painting;" and the third course, which consisted of four lectures, was delivered by Mr. John Anderson, Superintendent of Machinery to the War Department. His subject was "Applied Mechanics," which was treated of under several heads in relation to "Art and Science," in relation to "Natural Properties of Materials," in relation to "Natural Laws in processes," and in relation to "Natural Power." All these courses were well attended.

FOOD COMMITTEE.

This Committee has made the following report:—

During the past session, your Committee have carefully considered the various proposals for preserving meat and other food which have been brought under their notice. They have further examined specimens which had been submitted to Professor Gamgee's process, which has been before described; and they await further specimens for fuller investigation. They have also tested the value of the plan invented by Dr. Estor, which contemplates subjecting meat to the vapours emitted by burning pastiles, by which sulphurous acid, and subsequently chlorine, are liberated. This agency certainly exercises considerable influence in retarding decomposition. Mr. Davison has suggested the desiccation of meat by hot air; and Mr. Bridges Adams has strongly urged the value of dried meat, or *charqui*. More recently the Committee have witnessed the experiments of M. Fabrice, who, by the use of a vegetable solution containing some preparation of tannic or gallic acid, hopes to preserve organic substances for an indefinite period. Mr. Morris and Mr. Shand have both supplied the Committee with many interesting details of plans for either freezing food, or keeping meat in refrigerated air. The cooling is effected, in Mr. Morris's plan, by a machine constructed by Mr. Reece, which alternately condenses and aerifies a solution of ammoniacal gas; in M. Tellier's process, as explained by Mr. Shand, methylated ether is vaporised, and again liquified.

The Committee have looked with the greatest interest to these proposals, and hope that the machines in use may be so perfected as to afford an opportunity of fairly testing the practicability and value of these processes.

The plan for importing live cattle from the River Plate, as suggested by Mr. Atkin last year, has again been discussed in a letter from Captain Hight, and in the evidence of Mr. Bailey. So far as information has as yet been received, this scheme does not seem to afford any great prospect of ultimate success.

On the whole, the Committee beg leave to report that, though they have had before them the above schemes (all of which are of considerable ingenuity and merit), they are not able to state that the problem of importing meat in a fresh state from distant countries has yet been completely solved.

The supply of milk, the best modes of carriage both of this essential article of food and of meat in railway vans, has been fully considered, and many plans and models have been sent in to the Society in competition for the prize it has offered.

The great desirability of increasing the present supply of fish, and securing the best means for its distribution when brought to market, have continued to receive the earnest attention of the Committee, but they are not prepared to say that any suggestion promising to attain these objects has been supported by adequate evidence.

In conclusion, your Committee beg leave to say that they are desirous further to prosecute inquiries, which they believe have been the means of diffusing much useful information, and which have beneficially directed public attention to this most important subject.

BENJ. SHAW, *Vice-Chairman*.

June 21st, 1869.

NATIONAL MUSICAL EDUCATION.

The Committee for promoting National Musical Education, have, through the Right Hon. Sir John Pakington, renewed their communications with the Royal Academy of Music, in the hope, which they have always entertained, that the Academy may become the basis for an enlarged system of national musical education. Owing to the retirement of the Earl of Wilton from the direction of the Academy, and the death of Sir George Clerk, Bart., both of whom were much interested in the subject, the correspondence with the Academy had been suspended.

The Society has petitioned Parliament to take National Musical Education into consideration, with the view of affording sufficient aid in its promotion.

The Musical Committee has obtained, through the Foreign Office, very valuable information on the present state of the musical pitch in different capitals of Europe, which will be duly published in the *Journal*.

INDIA COMMITTEE.

It having been suggested to the Council that it would be advisable to hold meetings at which Indian subjects could be taken into consideration, it was thereupon resolved that a Committee be formed to organise meetings for the discussion of subjects connected with the Arts, Manufactures, and Commerce of our Indian Empire, under the auspices of this Committee.

There has been held a series of Conferences on several important subjects. These embrace "The Cultivation of Tea," "The Cultivation and Supply of Silk," "Hill Settlements and Sanitaria for European Settlers," "Indian Fibres," "Waste Lands," "Trade with Central Asia," and "The Culture of Cotton in India." The discussions have been attended by leading men interested in India, and have

had the effect not only of awakening greater attention as to our empire there in the journals here, but have put the Indian press in possession of public opinion at home. The chief benefit, however, has been in showing what are our commercial wants with regard to India, and in bringing them for consideration before the practical administrators of India, many eminent members of the civil and military service of which have taken part in the proceedings. The great staples of tea, cotton, and silk, have, under these circumstances, been practically treated, with very great advantage to all concerned in their promotion, and in a manner very creditable to our Society. Full reports of these meetings have appeared in the *Journal*.

THE THAMES EMBANKMENT.

A Committee was appointed to report on the best way of dealing with the Thames Embankment, so that the opportunity might not be lost of making this noble site conducive to the improvement and embellishment of the metropolis. Its proceedings have been reported at length in the *Journal*. The Committee were of opinion that it should form part of the duty of a responsible minister, to exercise a controlling power, within necessary limits, over all operations bearing upon any public works in which the convenience and embellishment of the metropolis of the country are concerned; and the Council have petitioned both Houses of Parliament, praying for the appointment of such responsible control, and for the occupation of the Embankment with public buildings of such a character as the Natural History Museum and the Law Courts.

MINISTER OF THE FINE ARTS.

The Council have appointed a Committee to consider whether it would be advantageous that matters referring to the promotion and interests of the Fine Arts in this country should be placed in charge of a Minister of the Crown, and, if it be so considered, that steps be taken to place the subject before the Government. This Committee, not having completed its investigations, will seek renewal from the new Council.

PISCICULTURAL COMMITTEE.

At the suggestion of the Food Committee, the Council has established a Piscicultural Committee to discuss subjects connected with the preservation and breeding of fish, as bearing materially on the supply of food to the people. A very large number of persons throughout the United Kingdom interested in the subject, and especially the conservators of fisheries, have joined the Committee. Two meetings have been held, and a deputation from the Committee waited upon the Home Secretary to confer with him in reference to the Bill now before Parliament for amending the Salmon Fishery Laws.

POSTAL REFORM.

A Committee has been appointed by the Council for the purpose of "Promoting the adoption of reduced rates of postage, particularly in reference to printed matter and parcels," and the Committee is now engaged in the consideration of the question, with a view to secure newspapers, printed matter, and parcels, being carried at rates not higher than those which are found practicable in France, Belgium, and the United States of America.

FREE LIBRARIES AND MUSEUMS.

The Council have appointed a Committee to take charge of this subject, and to endeavour, by collecting and diffusing information, to promote the multiplication of such libraries and museums throughout the United Kingdom, believing that they will prove a material aid in the promotion of that technical education among our artisans which the Society has taken so deep an interest in promoting.

DESIGNS FOR CHANNEL STEAMERS.

The very defective state of the accommodation afforded by the Channel steamers, plying between this country and the Continent, having been brought under the notice of the Council, they have determined to offer the Gold Medal of the Society, and the large Silver Medal of the Society, for the best and the second-best block model of a steamer, which shall afford the most convenient shelter and accommodation to passengers on the deck of the vessel crossing the Channel between France and England. The steamer is not to exceed in tonnage and draught the best vessels now in use between Folkestone and Boulogne, and the model must be on a scale of a quarter of an inch to a foot. The models, marked in cypher, are to be sent in to the Society of Arts' House, John-street, Adelphi, on or before the 1st November, 1869, with a sealed envelope, giving the name and address of the designer.

The Council reserve the right of withholding either or both medals, in case, in their opinion, the models sent in do not possess sufficient merit.

The following particulars of the South-Eastern Channel steamers, *Victoria*, *Albert Edward*, and *Alexandra*, are given for the convenience of competitors, but it is not intended to confine the designs to them, except as to tonnage and draught:—

Length between perpendiculars, 200 ft.

Breadth of beam, 24 ft.

Depth underside of deck amidships, 12 ft. 6 in.

Draught of water, 7 ft.

Bow, clipper.

Stern, elliptic.

Rig, polacca with two masts, lug foresail, gaff mainsail, staysail, and flying jib.

Engines, oscillating.

Paddle wheels, 17 ft. 6 in. diameter.
Tonnage, 568 tons.
Speed, 17 miles an hour.

THE LONDON CAB SYSTEM.

The improvement of the cab system of the metropolis was, two years ago, brought before the Society by Mr. Cole, and early in the year a deputation from the Council, headed by the Chairman, Lord Henry Lennox, waited upon the Home Secretary, pointing out the evils of the present system, and expressing a hope that the Government would take some steps in the way of legislation, to place the cab arrangements in London on an improved footing. On a subsequent day the Council summoned a conference on the subject, to which were invited the principal cab proprietors in the metropolis, many drivers, and others taking an interest in the question. The proceedings of this conference have been fully reported in the *Journal*, and it is believed that the information elicited at that meeting will be found of value in assisting the Government to arrive at a plan which will place the system on a more satisfactory basis than at present. In order to promote the establishment of a better class of vehicles—which it is hoped the new system may call into existence—the Council have determined to offer the following prizes:—

- The Society's Gold Medal for the best and most convenient open hackney carriage for two persons.
- The Society's Silver Medal for the second-best ditto.
- The Society's Gold Medal for the best and most convenient closed hackney carriage for two persons.
- The Society's Silver Medal for the second-best ditto.
- The Society's Gold Medal for the best and most convenient hackney carriage for four persons, either open or closed, or both.
- The Society's Silver Medal for the second-best ditto.

Lightness of construction, combined with adequate strength and durability, will be especially considered in making the awards.

The awards will be made after actual trials of the carriages extending over a certain period.

Communications describing the carriages must be sent to the Secretary of the Society of Arts before the 1st January, 1870, the carriages to be sent to a place hereafter to be appointed.

The Council also offer the Society's Silver Medal for the best instrument, to be affixed to a cab or other hackney carriage, for indicating the fare as between the passenger and the driver, whether by registering the distance travelled or otherwise, and which instrument shall also indicate, for the convenience of the cab-owner and of the driver, the total distance travelled during the day and the total amount earned. The instruments competing, with full descriptions of their construction, to be sent to the Society's House before the 1st January, 1870.

Competitors may, at their option, sign their communications, or may forward with them

sealed letters containing the name and address of the writer.

The Council reserve to themselves the right of withholding all or any of the medals, in case none of the carriages or instruments possess, in their opinion, sufficient merit.

TECHNICAL EDUCATION.

The Council, having received from Owens College, Manchester, a communication in reference to some steps which might be taken for the promotion of technical education, and the establishment of technical colleges, after some correspondence, have resolved to convene meetings in various centres of industry, for the purpose of calling attention to the importance of promoting the establishment of technical colleges and science schools, under a system which shall combine local action and State aid; and the Council have instructed the Secretary to place himself in communication with the mayors and other authorities, with a view to the holding of such meetings, and they hope to have the assistance of the members of the Society residing in the several localities.

UNION OF INSTITUTIONS.

The Union remains as to numbers about the same as last year, and, judging from the reports of the visiting officers, and by the results of the Examinations, the Institutions are doing good work in the way of systematic teaching. For the details connected with the Examinations the Council refer to the Secretary's report, communicated to the Annual Conference, which was held on the 23rd instant. By the report of the proceedings of the Conference, it will be seen that a grave question for their consideration has arisen—how far it is right that the Society should continue to include in its list those subjects in which the Science and Art Department holds Examinations.

MEETINGS AT THE SOCIETY'S ROOMS.

The Council have had much pleasure in placing the rooms of the Society at the disposal of various societies and other public bodies, for the discussion of subjects allied to Arts, Manufactures, and Commerce, and the Council look forward to increasing the use of the Society's premises in a similar direction in future.

Meetings have been held by the Institute of Naval Architects (continuing for three days), the new Iron and Steel Institute, the Acclimatization Society, the Aeronautical Society, the Co-operative Congress (extending over four days), the Association for the Suppression of Pauperism and Crime, the Working Men's Technical Education Conference, the National Choral Society, the Social Science Association, the Labourers' Cottage Congress, the Yorkshire Union Deputation, the Royal College of Pre-

ceptors, the London Association of Church Schoolmasters, and by other bodies.

FINANCE.

Appended to the report are statements of accounts, published in the last *Journal*, as required by the Bye-laws. Although it appears that the liabilities are somewhat larger than last year, it must be borne in mind that this year several items of expenditure have come into account which will not recur in next year, such as the Donation to the East London Museum, the Swiney Prize, and the cost of printing the Artisans' Reports.

Admiral OMMANNEY moved the adoption of the report.

Mr. BOTLY seconded the motion, and, as a constant attendant at the Society's rooms, expressed himself as much gratified at the success of the various meetings and conferences that had been held. He also thought the Cantor Lectures were remarkably interesting. He approved of the policy of the Council in lending the Society's room to other societies, for the discussion of subjects allied to those which this Society specially took under its cognizance.

The CHAIRMAN having expressed the pleasure he felt at the manner in which the report had been received, The motion was put and carried.

The CHAIRMAN proposed that Mr. Samuel Redgrave, one of their Vice-Presidents, be re-elected the Society's Trustee of the Soane Museum.

Mr. TEULON, Vice-Chairman of the Council, seconded the motion, which was carried.

Mr. FITZGERALD proposed that a cordial vote of thanks be given to Lord Henry Lennox, the Chairman, and to the Council, for the admirable manner in which they had conducted the business of the Society during the past year. He might specially refer to the conferences on Indian subjects, in which he was himself specially interested, as amongst the most important and useful objects which had been undertaken during the preceding session.

Mr. PAGLIARDINI seconded the motion.

The CHAIRMAN, in acknowledging the compliment, desired to express, on behalf of his colleagues and himself, the gratification they felt at the manner in which the services which they had endeavoured to render to the Society had been appreciated by the members; he might say that those who had just been re-elected would use every effort in their power to promote the welfare and usefulness of the Society in the future. The proposer of this motion had referred to the conferences held in this room on Indian subjects as amongst the most useful of the Society's proceedings during the past session, a view in which he (the Chairman) cordially concurred. With reference to the Society's *conversazione* to-morrow evening, members were aware that it had been intended to present on this occasion an address from the Society to his Highness the Viceroy of Egypt, in acknowledgment of the enlightened encouragement given by his Highness to the promotion of Commerce, Agriculture, and the Arts in his own country, and especially for the kind aid that he had on all occasions shown himself ready to afford to the merchants, as well as to the government of this country. He (the Chairman) had seen the Viceroy on the previous evening, and his Highness personally expressed to him his high appreciation of the kind terms in which the invitation of the Council had been conveyed to him, and his great regret at being unable to be present at the Society's *conversazione*, owing to his being compelled to leave England to-morrow morning. He (the Chairman) had reason to know that his Highness was highly gratified at the warm re-

ception which the people of England had given him, as well as the highest personages in the realm. The Prince and Princess of Wales especially had, to his (the Chairman's) knowledge, done their very utmost to evince their cordial appreciation of the splendid hospitality shown them by his Highness on their recent visit to Egypt. He would conclude by again thanking the members present for the compliment paid to himself and his colleagues.

Mr. DAWBARN thought the meeting ought not to separate without expressing the thanks of the Society to the officers, to whom the members were so much indebted for their valuable services.

Mr. TEULON seconded the motion, and desired, as a member of the Council, to express his warm concurrence in the proposed motion.

The motion was then put, and carried unanimously.

Mr. LE NEVE FOSTER, on the part of himself and his colleagues, acknowledged the compliment.

The ballot having remained open one hour, and the scrutineers having reported, the Chairman declared that the following members had been elected to fill the several offices. The names in *Italics* are those of members who have not, during the past year, filled the offices to which they have been elected:—

COUNCIL.

PRESIDENT.

H.R.H. the Prince of Wales, K.G.

VICE-PRESIDENTS.

Sir W. H. Bodkin (Assistant Judge)	C. Wren Hoskyns, M.P.
Right Hon. H. A. Bruce, M.P.	Lord Henry G. Lennox, M.P.
The Lord Chancellor, F.R.S.	Sir John Lubbock, Bart.
Henry Cole, C.B.	Lord Lyttelton
<i>Sir Daniel Cooper, Bart.</i>	Right Hon. Sir John S. Pakington, Bart., M.P.
<i>Duke of Devonshire, K.G.</i>	Samuel Redgrave
Lord de l'Isle and Dudley	<i>Seymour Teulon</i>
<i>Sir J. W. Gordon, K.C.B.</i>	Thomas Twining
The Earl Granville, K.G., F.R.S.	Joseph Whitworth, LL.D., F.R.S.
William Hawes	The Archbishop of York

ORDINARY MEMBERS OF COUNCIL.

F. A. Abel, F.R.S.	Rev. W. Rogers
<i>Samuel Andrews</i>	Benjamin Shaw
John Bell	<i>Sir Charles Trevelyan, K.C.B.</i>
Edwin Chadwick, C.B.	<i>E. Carleton Tufnell</i>
<i>Sir Charles W. Dilke, Bart., M.P.</i>	James Ware
Major-General Sir Vincent Eyre, C.B.	<i>Major-General F. Eardley Wilmot, R.A., F.R.S.</i>

TREASURERS.

Hyde Clarke, D.C.L. | John Murray

AUDITORS.

G. C. T. Bartley | Henry Vaughan

SECRETARY.

Peter Le Neve Foster, M.A.

FINANCIAL OFFICER.

Samuel Thomas Davonport.

The CHAIRMAN proposed a vote of thanks to the scrutineers, Mr. Botly and Mr. Dawbarn, for their services, which was carried.

At the conclusion of the General Meeting a Special Meeting was held, when the following candidates were balloted for and duly elected members of the Society:—

- Adams, John, 3, College-gardens, Dulwich, S.E.
 Black, John Thomas, 9, Adelaide-road, N.W.
 Bliss, William, Chipping Norton, Oxon.
 Brett, William, 3, Elgin-terrace, Kensington-park, W.
 Broadwood, Walter Stewart, 3, Queen's-gate-gardens, South Kensington, W.
 Churchill, James D., 531, Oxford-street, W.
 Couch, Enos, 172, High-street, Wapping, E.
 Crookenden, J. A., Phoenix Gas Company, Bankside, S.E.
 Crowther, Joseph, 13, Upton-road North, De Beauvoir-town, N.W.
 Dale, John, Cornbrook, Manchester.
 Davies, George V., 9, Cambridge-terrace, Chelsea, S.W.
 Davison, James W., 36, Tavistock-place, W.C.
 De Bathe, Major-General Henry Percival, 3, Morpeth-terrace, S.W.
 Dennison, William, 46, West-square, Southwark, S.E.
 De Vahl, Arthur D. S., 1, Hyde-park-square, W.
 Douglas-Hamilton, A., 34, St. George's-road, S.W.
 Earle, Thomas, 1, Vincent-street, Ovington-square, S.W.
 Eaton, Richard, Inns of Court Hotel, Holborn, E.C.
 Edwards, W. J., 21, Elmore-street, Islington, N.
 Fairbrother, Rev. William, Hornsey-lane, N.
 Farrow, Morley, 23, Clifton-gardens, W.
 Fell, William H., 73, Wenlock-street, New North-road, N.
 Fernandes, Albert Bernard, 24, Tavistock-terrace, Westbourne-park, W.
 Galloway, Rev. William Brown, M.A., 1, Fitzroy-road, Primrose-hill, N.W.
 Gannell, Henry, 34, Sydney-street, Brompton, S.W.
 Gardner, Edward Vincent, Berners-college, 44, Berners-street, W.
 Gardner, John Dunn, 19, Park-street, Park-lane, W.
 Grant, Thomas, 29, Gerrard-street, Soho, W.C.
 Guelfon, Richard, 138, Buckingham-palace-road, Pimlico, S.W.
 Haines, Frederick, 413, Edgware-road, W.
 Hall, G., 3, Westminster-chambers, Victoria-street, S.W.
 Hallé, Charles, 11, Mansfield-street, W.
 Haly, Col., 12, St. Stephen's-road, Shepherd's-bush, W.
 Haly, J. Standish, 15, Cockspur-street, S.W.
 Hammond, Edward W., 29, Charlwood-street, South Belgravia, S.W.
 Handford, George C., 224, King's-road, Chelsea, S.W.
 Hankey, William Barnard, Fetcham-park, Leatherhead.
 Harrison, Charles Fisher, 1, Malden-crescent, Haverstock-hill, N.W.
 Harrison, Octavius B. C., 4, Paper-buildings, Temple, E.C.
 Harrison, William, Addingham-house, Quadrant-road south, Highbury New-park, N.
 Hart, Arthur Marmaduke, 15, Campbell-road, Bow-road, E.
 Hart, G. W., Hayling Island, Hants.
 Harvey, John, 33, Harewood-square, N.W.
 Hay, Frederick Rudolph, 35, Mornington-road, Regent's-park, N.W.
 Henderson, James, 10, Whitehall, S.W.
 Henry, Mitchell, Stratheden-house, Hyde-park, S.W.
 Hind, George W., 5, Torrington-square, W.C.
 Houchin, Richard, 13, Bridport-place, New North-road, N.
 Inglefield, Rear-Admiral, E.C., C.B., F.R.S., 10, Grove-end-road, N.W.
 Irons, Rev. W. J., D.D., Michael's-grove, Brompton, S.W.
 Jackson, Charles W., 9, The Grove, South Lambeth, S.W.
 Jago, George J., 19, Cheyne-walk, Chelsea, S.W.
 Jago, Arthur, 38, Tregunter-road, Brompton, S.W.
 James, Hugh, 68, Church-street, Chelsea, S.W.
 Jervis, Rev. W. Henley, M.A., 28, Holland-park, Kensington, W.
 Kalisch, Marcus, Ph.D., 3, Clifton-road, St. John's-wood, N.W.
 Keating, Hon. Sir Henry S., 11, Prince's-gardens, W.
 Kell, Thomas, 8, Castle-street, Holborn, E.C.
 Lacey, John, 4, Wellington-street, London-bridge, S.E.
 Laing, George E., 1, Raymond-buildings, W.C.
 Lamb, Robert, 66, Richmond-road, Barnsbury, N.
 Lamplough, H. T., 22, Myra-villas, King Henry's-road, Hampstead, N.W.
 Lane, George Henry, 16, Redcliffe-gardens, The Boltons, S.W.
 Lange, Daniel A., 21, Regent-street, S.W.
 Langley, J. Baxter, 50, Lincoln's-inn-fields, W.C.
 Lansdowne, George, 2 and 3, Warwick-street, Charing-cross, S.W.
 Lara, D. Laurent de, 3, Torrington-square, W.C.
 Lawlor, John, 233, Stanhope-st., Hampstead-road, N.W.
 Lawrence, Sir Trevor, Bart., 18, Whitehall-place, S.W.
 Lawson, George Anderson, 139, Gloucester-road, Regent's-park, N.W.
 Macgeorge, W., 1, Castle-court, Birchin-lane, E.C.
 Macpherson, Charles H., 23, Kingsdown-road, Upper Holloway, N.
 Maguire, Henry Carlton, 2, Hargrave-park-road, Upper Holloway, N.
 Maguire, John Thomas, The Vale, Chelsea, S.W.
 Malgarini, Frederick Lewis, 30, Bedford-row, W.C.
 Manning, John, 6, Lothbury, E.C.
 Marshall, Rev. Charles, M.A., 9, South-street, Finsbury-square, E.C.
 Martin, Sir James Ranald, C.B., F.R.S., 37, Upper Brook-street, W.
 Marx, Karl, Ph.D., 1, Modena-villas, Haverstock-hill, N.W.
 Mason, Matthew, 21, Doughty-street, W.C.
 Mason, Samuel, Mecklenburgh-square, W.C.
 Maudslay, Thomas Henry, Knight's-hill, Norwood, S.E.
 May, Thomas, 1, Elgin-villas, Notting-hill, W.
 Mc Kerrell, Robert, 45, Inverness-terrace, W.
 Morton, William Scott, 65, Great Russell-street, W.C.
 Murray, A. J., 181, Albany-road, Camberwell, S.E.
 Napier, John, 1A, Fitzroy-square, W.
 Napier, John, 1A, Fitzroy-square, W., and Glasgow.
 Nash, Joseph, jun., York-chambers, York-buildings, Adelphi, W.C.
 Nelson, Thomas A., M.D., 10, Nottingham-terrace, York-gate, Regent's-park, N.W.
 Nettelford, Frederick, 20, York-terrace, Regent's-park, N.W.
 Nevett, William Charles, 17, Huntingdon-street, Barnsbury, N.
 Palmer, Frederic W., Ormond-house, 363, Old Kent-road, S.E.
 Pamphilon, Frederick W., 5, John-street, Adelphi, W.C.
 Parry, John Humffreys, 20, Upper Gloucester-place, Dorset-square, N.W.
 Phillips, Octavius, 34, Princes-square, W., and 91, Great Tower-street, E.C.
 Quaritch, Bernard, 15, Piccadilly, W.
 Quilter, William, 3, Moorgate-street, E.C.
 Radford, Edward, 6, Abingdon-villas west, Kensington, W.
 Radford, James, 16, Sheffield-terrace, Campden-hill, Kensington, W.
 Rahn, Charles, 80, Brook-street, W.
 Ramsay, Frederick William, M.D., 15, Somerset-street, Portman-square, W.
 Ramsden, J. C., Little Horton-lane, Bradford, Yorkshire.
 Ravenscroft, H., Powis-lodge, Haverstock-hill, N.W.
 Rawlings, James, 184, Belsize-road, St. John's-wood, N.W.
 Rawlins, Henry J. E., 99, Southampton-row, W.C.
 Rawlinson, Major-General Sir Henry Creswick, K.C.B., F.R.S., 2, Hill-street, Berkeley-square, W.
 Rayment, Samuel J., 79, Leighton-road, Kentish-town, N.W.
 Robinson, Edwin, 76, Worship-street, E.C.
 Samuel, John, 32, Park-lane, W.
 Sanderson, Richard Manners, 65, Wimpole-street, W.
 Sang, Frederick, 24, Sackville-street, Piccadilly, W.
 Sassoon, R. D., 15, Leadenhall-street, E.C.

Simpson, Richard, 9, Fenchurch-street, E.C.
 Tapernoux, Paul E., 58, Park-walk, Chelsea, S.W.
 Taylor, Stephen S., Prospect-villa, Peckham-rye-common, S.E.
 Underwood, W. Elphinstone, 3, St. Stephen's-crescent, Westbourne-park, W.
 Valentine, John S., 11, Park-street, Westminster, S.W.
 Warburg, Frederic E., 53, Prince's-square, Bayswater, W.
 Ward, Edward Matthew, R.A., Kent-villa, Lansdowne-road, Kensington-park, W.
 Ward, John Edward, Elm-cottage, Grosvenor-road, S.W.
 Ware, Thomas, Manor-house, 182, Mare-street, Hackney, N.E.
 Warren, Reginald A., 99, Great Russell-street, W.C., and Preston-place, near Arundel.
 Waterlow, Alfred James, 25, Park-crescent, Regent's-park, N.W.
 Watkins, Wynne W., 67, Claverton-street, South Belgravia, S.W.
 Watney, James, 32, Prince's-gardens, W.
 Watts, Thomas, British Museum, W.C.
 Worley, Joshua, 6, Brabant-court, Philpot-lane, E.C.
 Yapp, George, 172, Oakley-street, Chelsea, S.W.
 Yardley, Samuel, 50, Charlwood-street, Pimlico, S.W.
 Young, Frederick, 10, Russell-road, Kensington, W.
 Young, John, 35, King-street, Cheapside, E.C.
 Young, William, 47, Hemingford-road, Barnsbury, N.

AND AS HONORARY CORRESPONDING MEMBER.

Aymar-Bression, M., Directeur-Général de l'Académie Nationale, 41, Rue du Cardinal Fesch, Paris.

FINAL EXAMINATIONS, 1869.

The following Table shows the ages of the 2,525 Candidates from whom return papers were received. Of these, 2,160 underwent the Final Examination:—

Age.	No. of Candidates.	Age.	No. of Candidates.
16	274	33	16
17	324	34	14
18	351	35	14
19	277	36	9
20	253	37	9
21	182	38	6
22	146	39	3
23	136	40	3
24	88	41	2
25	78	42	3
26	80	43	2
27	73	44	3
28	49	45	2
29	47	47	2
30	35	48	1
31	27		
32	16	Total	2,525

OCCUPATIONS, PRESENT OR PROPOSED, OF THE 2,525 CANDIDATES FROM WHOM RETURN PAPERS WERE RECEIVED:—

Accountants (and Clerks) ..	21	Blacksmiths	6
Agents	7	Bleacher	1
Architects (and Pupils) ..	14	Boat-builders	2
„ Clerks	4	Boiler-maker	1
Artist	1	Bookbinders	2
Assistants—Broker's ..	1	„ keepers	58
„ Editor's	1	„ sellers & assistants ..	7
„ Excise	1	Boot and shoe-makers ..	6
„ in Herbarium ..	1	Brass-finishers	4
„ Laboratory	3	„ founder	1
„ Jeweller's	2	„ moulder	1
„ Surveyor of Taxes ..	1	„ scale-beam filer ..	1
Bakers	2	Bricklayer	1
Bath-attendant	1	Brush-maker	1
		Builders	4
		Butchers	2

Cabinet-makers	11	Dyers	10
Calico-printer	1	Electro-plate Manufac-	
Caligrapher	1	turer	1
Card-cutter	1	Engine-driver	1
Carder	1	„ erectors	7
Carpenters	39	Engineers (apprentices	
Caulkers	2	and students) ..	153
Chemists and Assistants ..	22	„ marine	3
„ Analytic	2	„ mechanical ..	5
„ and Dentist	1	Engravers	9
„ and Druggists ..	12		
China-dealer	1	Factor	1
„ packer	1	Factory operatives ..	3
Church (the)	2	Factory-maker	1
Cigar-maker	1	Fancy-box-maker ..	1
City Missionary	1	Farm-bailiff	1
Civil Engineers	7	„ servants	3
„ Clerk	1	Farmers	2
„ Service	4	Fellmonger	1
Clerks—Bankers', Com-		File-cutter	1
mercial, &c. ..	490	Fitters, &c.	51
„ in Admir.		Flax-buyer	1
„ Registry	1	Florist	1
„ Auctioneers' ..	1	Flyer-maker	1
„ Builders'	4	Foreign-correspondent	1
„ City Rate Office ..	1	Foremen	3
„ Customs'	2	Foundry apprentice ..	1
„ Engineers'	3	Fruiterer	1
„ Gas-works'	2		
„ Government ..	1	Gardeners	23
„ Insurance	5	Gas-fitters	4
„ Land Agency ..		Gilder	1
„ Office	1	Glass-engraver	1
„ Law, &c.	39	„ painters	2
„ in a museum ..	1	„ stainer	1
„ in Ordnance ..		Governesses	10
„ Survey	4	Grease-maker	1
„ Post-office	1	Greengrocer	1
„ Printer's	1	Grinder	1
„ Railway	22	Grocers and assistants ..	17
„ Shipping	2	Gun and Pistol-case	
„ Smith's	1	maker	1
„ Telegraph	3	Gunsmith	1
Clogger	1		
Cloth-dresser	1	Hairdresser	1
„ lapper	1	Hat-trimmer	1
„ looker	1	Hatters	8
Clothiers	2	Hosier	1
Coach-makers	2	House-decorators ..	3
„ man	1	„ factor	1
„ painters	2	Inland Revenue officer	1
Coal-dealer	1	Inspector of Water-	
„ miner	1	works	1
Collar-maker	1	Iron-moulders	3
Collectors	5	„ turners	5
Colour-mixers	2	Ironmongers (and assist-	
Commercial travellers ..	5	ants)	8
Compositors	5		
Coopers	2	Jewel-case makers ..	3
Corporal Royal Marines ..	1	Jeweller	1
Cotton-weigher	1	Jeweller's-engraver ..	1
Curriers	2	Joiners	82
Customs' Officers	5	Knotters	3
Cutler	1	Labourers	9
Cut-lookers	2	Law stationer	1
		Leather-seller	1
Dental-mechanist	1	Letter-carriers	2
Dentists	3	Librarians	3
Designer	1	Light-house service ..	1
Dispensers	4	Linen-trade, in the ..	1
Drapers (and assistants) ..	31	Lithographers	5
Draughtsmen	27	Locksmith	1
Drawer-in	1		
Drawing-master	1	Machine-fitter	1
Dressmaker	1	„ joiners	5
Druggists, &c.	21	Machinists	5
Drysalter	1		

Magazine-keeper.. .. 1	Saddlers 1	<i>Abstract of the Supplies of Fish delivered at and sold in Billingsgate Market from the 1st to 31st of May, 1869, with a computation of the value thereof.</i>
Makers-up 5	„ ironmonger .. 1	
Maltster 1	Sail-maker 1	Salmon (salmon, grilse, trout), 3,400 packages, at £10 10s., per
Manufacturers 6	Salesmen 15	£35,700
Masons 7	Sawyer 1	[These fish packages are usually computed at an average weight, on an entire season, of 112 lbs. each, but it must be borne in mind that, during the early portion of the season, when the salmon are all large "spring-fish," that standard is increased fully 25 per cent.; there has not been more than a score boxes of grilse at market this season, which has been, thus far, one of the scarcest years for salmon known at Billingsgate.*]
Mast and Block-maker 1	Seal-engraver .. 1	Trawl fish:—
Mat-makers 4	School-masters .. 35	Per steam-ships (Hewat and Co., limited)—
Measurers 3	„ mistresses .. 7	Prime (turbot, brill, soles, &c.)
Mechanics 115	Self-actor minders .. 14	9,420 packages, at £2
Medical student 1	Serjeants 2	£18,840
Merchants 6	Ship-joiner 1	Offal (haddock, plaice, whiting, &c.), 32,038 packages, at 10s. ..
Mill-hands 4	„ wrights and apprentices .. 48	16,019
„ man 1	Shirt-cutter 1	[It is principally to these vessels that the inhabitants of the metropolis are indebted for their supplies of fresh fish, particularly in the summer months, when the smacks cannot make the harbours during the prevailing calm weather "in shore." These steam-ships take on board their freights at sea, and the smacks are thus enabled to secure a ready market for their produce, and to remain on the fishing grounds, which is to them a matter of paramount importance.]
„ wrights 35	Shopmen 4	Per cutters and other vessels—
Milliners 2	Shuttle-maker .. 1	Prime, 8,400 packages, at £2 ..
Minders 3	Size manufacturer .. 1	16,800
Monitors 3	Skip-maker 1	Offal, 30,000 packages, at 10s. ..
Moulders 9	Smiths 11	15,000
Music-seller 1	Soldiers 0	Per railways—
	Solicitors 6	Prime, 25,000 packages, at £2 ..
News-agent 1	Sorter in Post-office .. 3	50,400
Newspaper manager .. 1	Spindle-makers .. 2	Offal, 9,600 packages, at 10s. ..
Normal student 1	Spinners 14	4,800
	Staff-serjeant 1	
Office-lads 5	Stamper 1	121,859
Opticians 2	Staircase builder .. 1	Per railways, quality not described,† 3,000 tons, at £25, per
Organ-builder 2	Stationers 3	75,000
Organist 1	Stereotyper 1	Per railways, "specials" (no information)
Overlookers 6	Stone masons 11	(nil)
	Store-keepers 4	Lobsters, 5,000 packages
Packer 1	Surgical instrument maker 1	6,400
Painters, house, &c. .. 11	Surveyors and assistants 11	Crabs, 7,300 ditto
Paper-makers 2	Tailors 8	5,500
Pattern-book maker .. 1	Teachers (other than pupil-teachers) .. 82	Shrimps
„ makers 30	Tenter 1	3,000
Pawnbrokers and assistants .. 5	Time-keepers 6	7,500
Pen-holder maker .. 1	Tin-plate workers .. 4	[It is scarcely necessary to remark that during the months of May, June, July, and August, these bivalves are not much in request, therefore the computation cannot be considered as an approximation to what the return would be in the "season."]
Philosophical instrument maker .. 1	„ smiths 1	Winkles, whelks, cockles, &c.
Photographers 2	Tobacco manufacturer .. 1	5,000
Pianoforte makers .. 2	Tobacconist 1	Salt fish (dry), herrings, cod, ling, skate, &c.
„ tuner 1	Tool-makers 2	8,000
Pilot 1	Turners 42	Irish mackerel, 5,500 boxes, at 30s., per
Piecers 15	Twisters 3	8,250
Pin-grinder 1	Upholsterers 6	[These fish are principally caught at Kinsale by the boats of the South of Ireland Fishing Company, Limited, established in 1865, which has since paid an average dividend of about 15 per cent. per annum on the paid-up capital.]
Planers 2	Usher 1	English mackerel, 20,000 pads, at 10s. per ..
Plasterers 2	Waiter 1	10,000
Plate-layer 1	Warehousemen and lads 91	[Each pad contains from 50 to 60 fish.]
Plumbers, &c. 4	Warpers 3	Smoked fish—Herrings, bloaters, kippers, reds, &c., haddock (English and Scotch kippered),
Pocket-book maker .. 1	Waste-dealer 1	
Porters 3	Watch-makers 7	
Post-office employé .. 1	Weavers 35	
Power-loom tenter .. 1	Weighing-machine filer .. 1	
Printers 17	Wheelwrights 6	
„ lithographic .. 2	Whitesmiths 4	
Prison officer 1	Winder 1	
Provision dealer 1	Wire-drawer 1	
Pupil-teachers 64	Wood-carvers 5	
Putters-out 2	„ engravers 1	
	Woodman 1	
Railway porter 1	Wool-sorters 11	
„ servant 1	Writers 12	
Rate collectors 2	Undetermined, or not stated 92	
Reader (and Secretary) 1	Total 2,525	
Reporter 1		
Roller-coverers 2		
Rope-maker 1		
Rose-engine turner .. 1		
Royal Engineer 1		

FISH SUPPLIES.

The following has been supplied, for the information of the Food Committee, by John Hoare, Esq.:—

* The total number of packages of salmon sold in Billingsgate Market during this year to 31st May, was 6,977.

† Principally drift-net and hook fish of sundry kinds.

salmon, sprats, &c. (sales during the month computed at)	10,000
[During the Yarmouth "season" 60,000 to 100,000 pads of bloaters are sold in this market weekly, realising from £30,000 to £50,000. The season commences about July.]	
Sundries—Cod, eels, conger-eels, red mullet, flounders, dorce, glossin, hake, gurnard, smelt, charr, grayling, pilchard, white-bait, dab, lamprey, ray, sturgeon (royal), &c. . .	10,000
	£306,209

Amongst the items contained in a tract, preserved in the library of the British Museum, by John Seller, sen., purporting to be "A Moderate Computation of the Expenses in Provisions spent in the Cities of London and Westminster, in 1691," is the following:—"In salt and fresh fish, at one penny a-day, for half a million of people, for one week, £14,583 6s. 8d." According to our return of the supplies of fish for the past month at Billingsgate, which we consider to be under the average, the aggregate totals only amount to £306,209, which would not amount to one penny per day for each person in the metropolis. Assuming that there were 3,000,000 persons in London and its environs each day during the month, and that their ichthyophagy cost them the same rate per head as their progenitors, according to Seller's "moderate computation," the aggregate sum should represent £350,000. However, as we have already observed, the past month must not be considered an average one, for during the Yarmouth season the sales are vastly in excess of that result.

Fine Arts.

THE PARIS SALON.—This exhibition closed on the 20th June, and although admitted to be very weak in important works, attracted an immense number of visitors. The two great prizes have been bestowed on M. Bonnat, for his "Assumption of the Virgin," painted for the Church of St. André at Bayonne, and M. Perraud, for his figure in marble, entitled "Despair." These are certainly the two finest works in their class in the salon, but the award of one of the great medals to M. Bonnat does not appear to give general satisfaction. The work of M. Perraud is one of great beauty. The figure—that of a young man—is seated by the side of the water, the hands clasped over the knees. The only mistake seems to be in the name given to the work, which might have been called "Grief," or "Disappointment."

Commerce.

TRADE BETWEEN VENICE AND ALEXANDRIA.—Since the establishment of a line of steamers between Venice and Alexandria the trade with Egypt has been greatly increased, as will be seen by the following comparison of the arrivals and departures of ships and the exports and imports to Venice from Alexandria in 1868 and 1867:—

Arrivals at Venice from Alexandria.

Laden.	1868.		1867.	
	No.	Tonnage.	No.	Tonnage.
Sailing vessels	6	1,338	7	1,349
Steam do.	31	18,797	..	..
In ballast:—				
Sailing vessels	2	410	1	372
Steam do.	1	621	1	419
Total	40	21,166	9	2,140

Departure from Venice for Alexandria.

Laden.	1868.		1867.	
	No.	Tonnage.	No.	Tonnage.
Sailing vessels	19	5,444	12	3,463
Steam do.	31	18,372	1	614
In ballast:—				
Sailing vessels .....	..	..	..	..
Steam do. ....	..	..	..	..
Total	50	23,816	13	4,077

The following are the values of the exports from Venice to Egypt:—

	1868.	1867.
	Francs.	Francs.
Spirits	7,440	..
Butter, lard	136,290	..
Hydraulic lime	4,920	450
Paper	21,825	..
Cereals	4,952	..
Rope and cordage	3,375	..
Beads and glass ware	141,426	5,500
Cheese	17,000	..
Fruit and vegetables	81,005	..
Timber	579,485	233,805
Books	2,386	..
Medicinal	9,100	..
Cloths	52,600	..
Wines	5,815	12,300
Various other produce	16,999	5,955
Total	1,084,657	258,010

Imports to Venice from Alexandria.

	1868.	1867.
	Francs.	Francs.
Colonial produce	2,210	..
Raw cotton	601,920	..
Fruit	595	..
Gum	79,500	..
Implements	700	..
Raw wool	2,475	..
Books	480	..
Metals	11,752	..
Natron	385,485	241,935
Oil from cotton seed	880	..
Hides	85,750	..
Tamarinds	3,080	..
Broken glass	1,200	..
Wines	600	..
Various other products	3,020	333
Total	1,179,647	242,268

Notes.

UNIVERSAL EXHIBITION OF ST. PETERSBURG.—The Russian government has issued a ukase for a universal exhibition, to be held at St. Petersburg next year, to open on the 15th of May. It is said that the Emperor Napoleon is expected to visit the Court of Russia on the occasion of this exhibition.

NEW STREETS IN PARIS TO BE NAMED AFTER MEN OF SCIENCE.—Three new streets are ordered to be pierced in that quarter of Paris known as Les Ternes, beyond the Arc de Triomphe at the end of the Champs Elysées; these streets are to be named after Lebon, Torricelli, and Faraday. There are already several streets in Paris bearing the names of distinguished foreigners, and the fact deserves to be recorded as an instance of international recognition and courtesy worthy of imitation.

MEETINGS FOR THE ENSUING WEEK.

- MON.....Society of Arts, 4. Mr. Arthur Hobhouse, Q.C., "On the Limits to be placed upon Posthumous Dispositions to Public Uses."
Entomological, 7.
Asiatic, 3.
ROYAL INST., 2. General Monthly Meeting.
WED ...Obstetrical, 8.
SATR. Botanic, 3½.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

- Par. Numb.
258. East India (Registered Debt)—Statement.
257. Edinburgh Churches—Returns.
City of London Gas Act (1868)—Report.
Fortifications—Minutes of Evidence.
Delivered on 17th June, 1869.
159. Bill—Fines and Fees Collection.
166. Poor-law Board Provisional Orders Confirmation.
216. Fisheries (Ireland)—Return.
253. Coal, Cinders, and Culm—Account.
254. Merchant Service—Return.
263. Life Assurances (Stamps)—Return.
Delivered on 18th June, 1869.
164. Bill—Parochial Schools (Scotland).
165. „ Debts of Deceased Persons.
167. „ Poor-law Union Loans (amended).
266. Agrarian Outrages (Ireland)—Return.
268. Education—Returns.
Papers relative to the complaints made against Mr. Grenville-Murray.
Public Petitions—Twenty-fourth Report.
Delivered on 21st June, 1869.
168. Bill—Dublin Freeman Disfranchisement.
262. Turnpike Acts Continuance—Report.
270. Navy (Steam Coal)—Report.
Delivered on 22nd June, 1869.
272. Canadian Railways—Statement and Account.
Education (Science and Art Department)—Sixteenth Report.
Statistical Abstract for the United Kingdom from 1854 to 1868—Sixteenth Number.
Delivered on 23rd June, 1869.
120. (1.) Election Petitions—Shorthand Writers' Notes of the Judgments.
265. Militia Regiments—Return.
269. Post-office Savings Banks—Return.
272. (1.) Canadian Railways—Correspondence.
Education—Report of the Committee of Council.
SESSION 1868.
433. (8) Endowed Charities (County of Huntingdon)—General Digest.

Patents.

From Commissioners of Patents' Journal, June 25.

GRANTS OF PROVISIONAL PROTECTION.

- Agricultural and garden implements—1844—R. McHardy.
Boiler tubes, &c., expanding the ends of—1805—C. Stuart and W. Walker.
Boots and shoes, apparatus for sewing—1856—A. Destouy.
Carriages, holdbacks for—1839—J. Halliwell.
Chain pulley blocks—1843—C. Stuart.
Cotton, &c., ginning, burring, and cleaning—1813—C. Mather.
Desks or benches, convertible—1862—J. H. Banks.
Doubling frames—1841—T. Knowles.
Electro-telegraphic apparatus—1801—W. A. Lyttle.
Furnaces—1806—J. Hill.
Glass, cutting—1815—L. H. Dennis.
Harmoniums—1848—S. V. Fontana.
Hats, &c., brims or sunshades for—1826—A. W. Moss.
Hats, &c., pad for—1859—C. Marlor.
Hay making and raking machines—1852—R. Hornsby and J. E. Phillips.
Helmets, hats, &c.—1812—J. H. Brown.
Horses, apparatus for stopping—1803—A. A. Ardisson.
Invalid persons, apparatus for carrying—1840—J. T. Masbon.
Iron—1817—R. Brown.
Lubricators—1834—J. Lindley.
Machinery, bearings for the spindles and shafts of various—1837—W. Bottomley.
Mineral oils, purifying—1832—W. Smith.
Necktie fasteners—1808—R. Wilson.
Paper, preparing materials for manufacturing—1855—T. Routledge.
Paper, preparing materials for manufacturing—1857—W. E. Newton.
Pipe joints—1810—J. H. Riddell.
Pipe joints—1816—E. G. Brewer.
Ploughs—1853—W. Woofe.

- Railway locomotives, &c., readjusting when thrown off the metals—1791—G. Bedell.
Railway trains, communication in—1835—H. Bathgate.
Reaping and mowing machines—1819—W. S. Underhill and J. Smith.
Reaping and mowing machines, &c.—1851—R. Hornsby and J. E. Phillips.
Roofs, &c.—1793—J. Riley.
Sawing machinery—1830—M. Benson.
Saws, &c., for cutting and dressing stone—1802—E. T. Hughes.
Sewing machine, apparatus for counting the stitches made by a—1860—W. R. Lake.
Sewing machines—1814—W. R. Lake.
Sewing machines—1823—W. R. Lake.
Sewing machines—1845—D. Dishart.
Ships' pumps—1820—W. E. Newton.
Shuttles—1822—J. G. Tongue.
Smoke, consuming—1836—W. Yates.
Spring mattresses and bedsteads—1842—H. Tylor.
Steam cocks, &c.—1697—J. Fletcher.
Steam engines, slide valves for—1821—J. Young.
Steam engines, &c., governors for—1846—J. Tangye.
Steam gauges—1811—G. W. Howe.
Submarine drilling apparatus—1804—W. E. Newton.
Tablets for advertising, &c.—1631—F. S. Angel.
Velocipedes—1789—C. Deubelgh.
Velocipedes—1799—J. G. Marshall.
Ventilating apparatus—1858—B. Hunt.
Waterproof overcoats, &c.—1847—B. Wartski.
Weighing and registering apparatus—1809—A. Lafargue.
Weighing machines—1827—F. Lejeune.
Wells, &c., sliding top for—1818—J. Taylor.
Wood-planing machines—1828—M. Benson.
Wool, &c., machinery for combing—1838—R. Beecroft.
Yarns, &c., apparatus for sizing and warping—1807—R. Duckworth, W. Greenwood, J. Pearson, and J. Langtree.
Yarns, &c., bleaching—1833—J. Bastow.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

- Castor oil, &c., making more palatable—1850—G. W. Fox.
Culinary utensils—1869—W. R. Lake.
Fabrics, rendering water-repellent—1884—H. A. Bonneville.
Railways—1879—W. R. Lake.
Sulphates, &c., preparing—1868—W. R. Lake.

PATENTS SEALED.

- | | |
|-----------------------------------|--------------------------------------|
| 3953. J. A. A. Landa. | 62. W. T. Waite. |
| 3956. F. A. V. Michel. | 98. C. J. Günther. |
| 3967. T. F. Henley. | 110. J. R. Hodgson. |
| 3971. G. Davies. | 112. E. P. North. |
| 3972. P. and R. Gornall. | 162. G. Brown. |
| 3982. A. Barclay. | 177. G. A. Crow. |
| 3989. T. Gibson. | 193. D. Rivenc. |
| 8. B. G. George. | 230. A. V. Newton. |
| 15. A. Carter and C. R. E. Grubb. | 502. J. Newton. |
| 18. H. A. Bonneville. | 693. C. Fairbairn. |
| 21. J. McKenny. | 1240. J. C. Ridley. |
| 41. E. Robbins. | 1278. T. Forster and P. B. Cow, jun. |
| 54. H. G. Fairburn. | 1444. J. A. Marden. |
| 59. J. Daglish. | |

From Commissioners of Patents' Journal, June 29.

PATENTS SEALED.

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|---|------------------------------------|
| 3964. S. and W. Fox, J. Reffitt, and G. Grange. | 260. G. Tangye. |
| 3969. W. Winter. | 295. K. C. Watson. |
| 3990. J. Seelig. | 351. W. E. Newton. |
| 2. T. Singleton. | 355. F. Braby. |
| 3. S. Lyons. | 361. J. H. Johnson. |
| 4. W. M. Williams. | 363. A. Clark. |
| 13. A. Batchelar. | 376. E. Meldrum. |
| 19. W. A. Biddell and J. Redgrave. | 431. C. Thomas. |
| 35. W. Dawes. | 564. A. V. Newton. |
| 106. C. P. Coles. | 753. J. H. Johnson. |
| 137. S. Russell. | 847. J. Hamilton and R. Paterson. |
| 141. J. H. Johnson. | 968. R. Johnson. |
| 148. F. Braby. | 1291. G. Hawthurst and J. Pollock. |
| 176. C. E. Brooman. | 1315. R. B. Forbes. |
| 228. W. E. Newton. | 1321. W. R. Lake. |
| 244. A. V. Newton. | 1462. W. F. de la Rue. |

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

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|--|------------------------------|
| 1682. W. Poupard. | 1739. J. H. Johnson. |
| 1700. W. Buckley and L. Smith. | 1744. J. D. Brunton. |
| 1719. W. Wyatt. | 1774. J. Clegg and J. Smith. |
| 1701. J. Milroy. | 1903. R. Mitchell. |
| 1758. T. C. Craven. | 1724. J. H. Johnson. |
| 1690. J., S. A., G. E., and F. F. Reading. | 1727. S. C. Lister. |

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

- | | |
|------------------------|------------------|
| 1844. H. Ponsonby. | 1890. I. Holden. |
| 1857. E. C. Nicholson. | 1901. J. Tatham. |